

## ABSTRACT OF THE INVENTION

In a MPEG audio decoding process, an IDCT (Inverse Discrete Cosine Transform) process that generates time domain samples from frequency domain samples using a very limited number of prestored cosine coefficients is performed. Only the cosine coefficients that satisfy  $\cos(\pi * (i/64))$  where  $i = 0-32$  are prestored. The cosine coefficients for  $i = 33-63$  are calculated using the prestored coefficients by changing a sign of a corresponding symmetrical one of the stored coefficients, respectively. Then, sixty-four time domain samples ( $V_i$ ) are generated from thirty-two frequency domain samples ( $S_k$ ) according to the equation

$$V_i = \sum_{k=0}^{31} \cos((\pi/64)(i+16)(2k+1)) \times S_k$$

where  $i = 0$  to  $63$ , using only the prestored cosine coefficients and the calculated cosine coefficients.